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Christopher M. Look

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EXAMINER

LEUNG, WAI LUN

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/785,617	Applicant(s) LOOK, CHRISTOPHER M.	
	Examiner DANNY W. LEUNG	Art Unit 2613	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 March 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 13-22 and 27-31 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 13-22 and 27-31 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>20090202 20090324</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. The indicated allowability of claims 13-22 is withdrawn in view of the newly discovered reference(s) to Suzuki. Rejections based on the newly cited reference(s) follow.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 13, 15-17, 27, and 29-31 are rejected under 35 U.S.C. 102(b) as being anticipated by **Nishio** (*US005521732A*).

Regarding to claims 13 and 27, **Nishio** discloses An apparatus (*fig 3*), comprising:

a wavelength switch module (WSM) (*fig 3, optical node 300, comprising wavelength switches 340-343, as described in col 3, ln 43-48*);

an optical transceiver (*fig 3, optical interfaces 314*), detachably coupled to the WSM, to send a first optical signal to the WSM (*fig 3, interface 314 sends an optical signal at λ_1 via waveguide 320 to WSM 300*), and to detect a second optical signal received from the WSM (*fig 3, optical interface 314 receives an ACK signal via waveguide 324 from WSM 300; col 4, ln 33-52*), after sending the first optical signal (*col 5, ln 8-25 lists a timing chart, which states that the ACK signal is sent after first optical packet signal*), , wherein the optical transceiver comprises an encoder to put an identification into the first optical signal to send with the first optical signal to the WSM (*col 4, ln 53-65, the optical header (an identification) is encoded onto the optical packet using light source 202 of the interface shown in fig 2*); and

Art Unit: 2613

a set of one or more processors (*fig 3, control circuit 370*), coupled to the WSM to automatically determine whether the second optical signal corresponds to the first optical signal in response to the identification and an interrupt from each of the WSM and the optical transceiver (*col 6, ln 31-51, control circuit 370 selects an optical packet signal from one of the work stations and determines the corresponding ACK signal or NACK signal in response to their headers in the event of a collision*).

As to claims 15 and 29, **Nishio** further teaches wherein the optical transceiver includes a decoder (*fig 2, receiver 205 receiving λ_c which contains header information*) to check whether the second optical signal includes the identification (*col 1, ln 57-col 2, ln 8, receiver 205 checks the header signals for an identification signal*).

As to claims 16 and 30, **Nishio** further teaches wherein the WSM includes:

an input port (*fig 3, port connecting to fiber 320*);

an output port having a one-to-one correspondence with the input port (*fig 3, port connecting to fiber 324*), ; and

a channel coupling the input port to the output port, wherein the first optical signal enters the WSM at the input port, passes through the channel, and exits through the output port (*fig 3, optical signal goes thru the channel in the switch module 300, the channel passes thru DIV 330 from the input port, and to the coupler 334, DIV 336, switches 340, tunable filter 350, and COM 360, and then to the output port*).

As to claims 17 and 31, **Nishio** further teaches wherein the optical transceiver comprises a light source, which is tunable to a wavelength designated to the channel (*fig 2, light source 201 at λ_1*).

Claim Rejections - 35 USC § 103

4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

5. Claims 18, 20-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Nishio** (*US005521732A*) in view of **Flauaus et al.** (*US 20050108444A1*).

Regarding claim 18, **Nishio**, teaches An optical network node (*fig 3*), comprising:
a wavelength switch module (WSM) (*fig 3, optical node 300, comprising wavelength switches 340-343, as described in col 3, ln 43-48*);
an optical transceiver (*fig 3, optical interfaces 314*), detachably coupled to the WSM, to send a first optical signal to the WSM (*fig 3, interface 314 sends an optical signal at λ_1 via waveguide 320 to WSM 300*), and to detect a second optical signal received from the WSM (*fig 3, optical interface 314 receives an ACK signal via waveguide 324 from WSM 300; col 4, ln 33-52*), after sending the first optical signal (*col 5, ln 8-25 lists a timing chart, which states that the ACK signal is sent after first optical packet signal*), , wherein the optical transceiver comprises an encoder to put an identification into the first optical signal to send with the first optical signal to the WSM (*col 4, ln 53-65, the optical header (an identification) can be encoded onto the optical packet using light source 202 of the interface shown in fig 2*); and

a set of one or more processors (*fig 3, control circuit 370*), coupled to the WSM to automatically determine whether the second optical signal corresponds to the first optical signal in response to the identification and an interrupt from each of the WSM and the optical transceiver (*col 6, ln 31-51, control circuit 370 selects an optical packet signal from one of the*

Art Unit: 2613

work stations and determines the corresponding ACK signal or NACK signal in response to their headers in the event of a collision).

Nishio does not expressly teaches wherein the optical network node is being applied onto a system comprising an optical network including a plurality of optical fibers; and have the first optical network node couple to the optical network. **Nishio's** optical network node (including switch modules 300 and optical transceivers 314-317 as discussed above) is coupled to workstations 310-313 in a network system, but not necessarily as a part of the optical network via optical fibers.

Flauaus from the same field of endeavor, teaches a system (*fig 1*), comprising: an optical network including a plurality of optical fibers (*fig 1, fiber channel fabric 110, including link 142, 143 connecting workstation 140 to switch 112, and links 174, 175 connecting between switch 112 and 120*); and a first optical network node coupled to the optical network (*fig 1, switch 112 acts as a network node coupled to the optical network*).

Therefore, it would have been obvious for a person of ordinary skill in the art at the time of invention to implement **Nishio's** network node onto a system comprising an optical network including a plurality of optical fibers similar to **Flauaus's** system where optical fiber reaches the workstation (*fig 1, Flauaus's workstation 140 is part of the optical network*), as a part of the optical network, such that **Nishio's** optical network node may reach workstations from a greater distance as illustrated by **Flauaus's** *fig 1*. The result of applying **Frogo's** technique of connecting multiple optical nodes in an optical system with **Nishio's** known network node with optical fiber would yield predictable result to a person of ordinary skill in the art as such configuration is common and well known. See **MPEP2143** Section D.

As to claims 20-22, **Nishio** teaches the corresponding recitations regarding claims 15-17 as discussed above. It would have been obvious for a person of ordinary skill in the art at the time when the invention was made to combine **Nishio and Flauaus** for the same reasons as stated above regarding claim 18, and the **combination of Nishio and Flauaus's** system would read on recitations regarding claims 20-22.

6. Claims 14 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Nishio** (*US005521732A*), in view of **Chbat et al.** (*US006810214B2*).

Regarding claims 14 and 28, **Nishio** discloses the apparatus in accordance to claim 13 and 27 as discussed above. **Nishio** further teaches wherein the WSM includes a variable optical filter (*fig 3, 350*) to vary the first optical signal before the first optical signal exits the WSM

and the optical transceiver includes a light detector to measure power of the second optical signal (*fig 2, receiver 207*), to determine whether the power of the second optical signal changes in response to the first optical signal (*col 1, ln 64-col 2, ln 8, optical signal receiver 207 inherently detect the optical power of the signal in order to perform O/E conversion; and upon receipt of an ACK or NACK, which changes in response to the first optical signal, the optical power of the second signal inherently change from "no signal" to ACK or NACK as illustrate in fig 4*).

Nishio does not disclose expressly wherein the variable optical filter in the WSM is a variable optical attenuator to vary power of the first optical signal. **Chbat**, from the same field of endeavor, teaches it is common and well known to replace variable optical filters with variable attenuators with multiplexers to vary power of the optical signal (*col 12, ln 5-12, functionality of a variable optical filter—attenuate all optical power except some particular wavelengths-- could*

Art Unit: 2613

be implemented with variably attenuating different wavelengths separated by demultiplexers, such technique is common and well known). Therefore, it would have been obvious for a person of ordinary skill in the art at the time of invention to replace **Nishio**'s variable optical filter with variable attenuators with multiplexer to vary power of the first optical signal as suggested by **Chbat**, and the result of which would have been predictable. *See MPEP 2143 Section B.*

7. Claim 19 rejected under 35 U.S.C. 103(a) as being unpatentable over **Nishio** (*US005521732A*) in view of **Flauaus et al.** (*US 20050108444A1*), and further in view of **Chbat et al.** (*US006810214B2*).

Regarding claim 19, **the combination of Nishio and Flauaus** discloses the system in accordance to claim 18 as discussed above. **Nishio** further teaches wherein the WSM includes a variable optical filter (*fig 3, 350*) to vary the first optical signal before the first optical signal exits the WSM

and the optical transceiver includes a light detector to measure power of the second optical signal (*fig 2, receiver 207*), to determine whether the power of the second optical signal changes in response to the first optical signal (*col 1, ln 64-col 2, ln 8, optical signal receiver 207 inherently detect the optical power of the signal in order to perform O/E conversion; and upon receipt of an ACK or NACK, which changes in response to the first optical signal, the optical power of the second signal inherently change from "no signal" to ACK or NACK as illustrate in fig 4*).

The combination of Nishio and Flauaus does not disclose expressly wherein the variable optical filter in the WSM is a variable optical attenuator to vary power of the first

Art Unit: 2613

optical signal. **Chbat**, from the same field of endeavor, teaches it is common and well known to replace variable optical filters with variable attenuators with multiplexers to vary power of the optical signal (*col 12, ln 5-12, functionality of a variable optical filter—attenuate all optical power except some particular wavelengths-- could be implemented with variably attenuating different wavelengths separated by demultiplexers, such technique is common and well known*).

Therefore, it would have been obvious for a person of ordinary skill in the art at the time of invention to replace **Nishio**'s variable optical filter with variable attenuators with multiplexer to vary power of the first optical signal in **the combination of Nishio and Flauaus's system** as suggested by **Chbat**, and the result of which would have been predictable. *See MPEP 2143 Section B.*

Response to Arguments

8. Applicant's arguments filed 3/24/2009 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

9. The prior art made of record in previous actions and not relied upon is considered pertinent to applicant's disclosure.

The following patents are cited to further show the state of the art with respect to Optical Communication regarding Wavelength Switch Modules and Optical Transceivers in general:

10. (US-20020044315 or US-20020027689 or US-20040017967 or US-20040052524 or US-20020080438 or US-20040190905 or US-20040208574 or US-20070147835 or US-20020126342 or US-20040008989 or US-20030174659 or US-20020163683 or US-20030152390 or US-20020018265 or US-20050074236 or US-20020041409 or US-

Art Unit: 2613

20060045520 or US-20060013585 or US-20090034965 or US-20020131120 or US-20020109882 or US-20040042796 or US-20020109879 or US-20020015209 or US-20090080881 or US-20080050117) or (US-20070230954 or US-20070237521 or US-20060269282 or US-20060056843 or US-20060013584 or US-20050196165 or US-20050163503 or US-20040208510 or US-20020097682) or (US-7076163 or US-7046928 or US-6980711 or US-6965735 or US-5978113 or US-5452115 or US-5319482 or US-4809361 or US-6580531 or US-5844702 or US-6920287 or US-4994675 or US-7079715 or US-6973269 or US-6983109 or US-6417944 or US-6369926 or US-6590681 or US-6504969 or US-7039316 or US-6934472 or US-6826368 or US-5488501 or US-6137927 or US-7146103 or US-6246511) or (US-6973228 or US-7174066 or US-6801679 or US-6332055 or US-5970201 or US-5867289 or US-5627925 or US-5708753 or US-7212739 or US-7151893 or US-6798991 or US-6704508 or US-6507421 or US-7035537 or US-6738581 or US-6583901 or US-7426347 or US-5682257 or US-5559624 or US-5537393 or US-7065268 or US-7317875 or US-6229788 or US-7155127 or US-6101014 or US-6671469 or US-5920414) or (US-6574018 or US-4845703 or US-7039318 or US-7242861 or US-6721502 or US-5777761 or US-6868232 or US-6433900 or US-5539564 or US-5495358 or US-5679987 or US-5296850 or US-6999677 or US-7526200 or US-7266297 or US-6871021 or US-6957018 or US-5896212 or US-5166926 or US-5157654 or US-5130984 or US-6466343 or US-7376348 or US-7099578 or US-H002075 or US-7533254 or US-7474851) or (US-7239773 or US-6804463 or US-7398018 or US-5144297 or US-5521732 or US-7326916 or US-6810214)

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DANNY W. LEUNG whose telephone number is (571)272-5504. The examiner can normally be reached on 11:30am-9:00pm Mon-Thur.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kenneth Vanderpuye can be reached on (571) 272-3078. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

DANNY W LEUNG
Examiner
Art Unit 2613

/D. W. L./
Examiner, Art Unit 2613
June 11, 2009

/Kenneth N Vanderpuye/
Supervisory Patent Examiner, Art Unit 2613